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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,090	12/30/2005	Glynne Ivo Gut	065691-0428	8146

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EXAMINER	
STAPLES, MARK	

ART UNIT	PAPER NUMBER
1637	

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/563,090	GUT ET AL.	
	Examiner	Art Unit	
	Mark Staples	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☒ Claim(s) *1, 8, and 15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12/30/2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *03/21/06 & 12/30/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *Notice to Comply*.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. "DNA" in the title should be capitalized.

A Brief Description of the Drawings is missing in the specification, See MPEP § 608.01(f). Appropriate correction is required.

The abstract of the disclosure is objected to because of inclusion of legal phraseology, as in the phrase "said given DNA sequence. Correction is required. See MPEP § 608.01(b).

Sequence Compliance

This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth below or on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures.

Page 9 of the specification contains sequences which are not identified by SEQ ID NOS. Figures 1-7 contain sequences which are not identified by SEQ ID NOS.

Applicant is given ONE MONTH, or THIRTY DAYS, whichever is longer, from the mailing date of this letter within which to comply with the sequence rules, 37 CFR 1.821 - 1.825. Failure to comply with these requirements will result in ABANDONMENT of the application under 37 CFR 1.821(g). Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). In no case may an applicant extend the period for reply beyond the SIX MONTH statutory period. Direct the reply to the undersigned. Applicant is requested to return a copy of the attached Notice to Comply with the reply.

Claim Objections

3. Claim 1 is objected to because of the following informalities: misspelling of "least" as "lest" in step 1 a). Appropriate correction is required.

4. Claim 8 is objected to because of the following informalities: incorrect grammar in the construction "group consisting of polymerase changing reaction OPCR) and the linear DNA copying procedure". Due to use of one parenthesis ")" and lack of commas, it is not clear how many things and what the things are in the "group consisting of". Appropriate correction is required.

5. Claim 15 is objected to because of the following informalities: misspelling of "purified" as "purfied". Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear what is meant by the term "engineered polymerase" in step 1 a) and thus claim 1 is indefinite and claims 2-17 are indefinite by their dependency on claim 1. The definition found in the specification for "engineered polymerase" does not contain any technical feature relating to modification of a polymerase (see specification on p. 4 lines 9-13).

Claims 2, 5, 6, and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 recites RNA bases as being "not natural". It is well known in the art that RNA bases are natural. Claims 5, 6, and 7 are

indefinite by their dependency on claim 1. It may be intended that ribose nucleic acids (RNA) replace deoxyribose nucleic acids (DNA) in the production of replicates of DNA sequences; but it should be kept in mind that this occurs naturally as well. It is noted that a chimeric sequence containing both RNA and DNA is not natural, but the claim language as broadly recited is not limited to chimeric sequences and encompasses sequences consisting solely of RNA, which are natural.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 recites a compound being "of the nature OH--(CH2)n-l". It is unclear what ""of the nature OH--(CH2)n-l" means as any limitation intended by this term is not discernable from the claim or the specification.

The term "elevated temperature" in claims 5 and 6 is a relative term which renders the claims indefinite. The term "elevated temperature" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The cleaving step in claims 5 and 6 is thus rendered indefinite.

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 12 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 12 was amended in the filing of 12/30/2005 from "the group comprising MALDI and ESI mass spectrometers" to "the group comprising MALDI or ESI mass spectrometers" (emphasis by Examiner). There is no support for this claim amendment in the specification at the time the application was filed, and thus this claim amendment is new matter. The specification disclosed the use of either MALDI or ESI and did not disclose the use of both together. The specification further disclosed "Mass spectrometry analysis is preferably done by MALDI" (see p. 8 line 6).

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Stanton Jr. et al. (cited on the Information Disclosure Statement (IDS), U.S. Patent No. 6,566,059 B1, issued 20 May 2003, filed 10 Sep. 1999, priority 17 Aug. 1999).

Regarding claims 1- 5 and 8, Stanton Jr. et al. teach methods for the detection in a given DNA sequence of DNA mutations, single nucleotide polymorphisms, and insertions and deletions comprising the steps of:

a) producing DNA replicates with a polymerase, including a chimeric polymerase, of a given DNA sequence with at least 50% of one of RNA bases, that is 100% RNA bases, by PRC (see column 61 lines 36-43, column 58 line 61 to column 59 line 1, and column 61 lines 36-58; relevant for claims 1-3);

b) using the RNA bases, deoxyribonuclotides which impart a susceptibility to alkaline cleavage, cleaving the replicate(s) obtained in step a) and to produce a DNA product presenting sequence-specific fragments (see column 16 lines 22-38 and column 59 lines 16-33, relevant for claims 1-5);

c) analyzing said sequence-specific fragments obtained in step b) by mass spectrometry to get sequence-specific fragment patterns (see column 16 lines 22-38, relevant for claims 1-5); and

d) using the sequence-specific fragment patterns obtained in step c) to identify sequence changes relative to a reference to said given DNA sequence (relevant for steps 1c and 1d see column 142 line 34 to column 143 line 22; also relevant for claims 3, 4, and 8).

Regarding claim 6, Stanton Jr. et al. teach a method in which the phosphorothioate base is cleaved by methanol (OH--CH3), that is where n = 2 and 2-1=2 in the core formula OH--(CH2)n-I; and p-mercaptoethanol (OH--CH2CH2--SH), that is where n = 3 and 3 –1 = 2 in the core formula OH--(CH2)n-I (see column 110, section 5, lines 60-67).

Regarding claim 7, Stanton Jr. et al. teach in which a photochemically cleavage inducible base is by exposure to light, laser photolysis (see column 106, lines 61-67).

Regarding claim 9, Stanton Jr. et al. teach methods wherein the linear copying procedure is a rolling circle replication (see column 61 lines 36-58).

Regarding claim 10, Stanton Jr. et al. teach a method wherein the replicates are purified (see column 156 lines 30-33: "The PCR products were purified . . . ").

Regarding claim 11, Stanton Jr. et al. teach a method the sequence-specific fragments are purified (see Figure 10 and Brief Description of the Figures found at column 67 lines 1-7 for separation and purification of restriction fragments).

Regarding claim 12, Stanton Jr. et al. teach methods wherein the mass spectrometer a MALDI mass spectrometers ((see column 61 lines 36-58).

Regarding claim 13, Stanton Jr. et al. teach kits for the detection in a given DNA sequence of DNA mutations comprising: a novel DNA polymerase of the invention, rNTPS and dNTPs, and appropriate buffers, that is reagents (see column 57 lines 42-47).

Regarding claims 14 and 16, Stanton Jr. et al. teach a method wherein the replicates are purified on reversed phase material (see Figure 10 and Brief Description of the Figures found at column 67 lines 1-7 for use of HPLC using a reverse phase C18 column to separate restriction fragments).

Regarding claims 15 and 17, Stanton Jr. et al. teach a method of purification by ion exchange HPLC which is a type of purification by ion exchange resin (see column 163 lines 32-34).

Conclusion

9. No claim is free of the prior art.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Staples whose telephone number is (571) 272-9053. The examiner can normally be reached on Monday through Friday, 9:00 a.m. to 6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (571) 272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mark Staples
Examiner
Art Unit 1637
November 10, 2006

GARY BENZION, PH.D
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600

Notice to Comply	Application No. 10/563,090	Applicant(s) GUT ET AL.	
	Examiner Mark Staples	Art Unit 1637	

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

Applicant must file the items indicated below within the time period set the Office action to which the Notice is attached to avoid abandonment under 35 U.S.C. § 133 (extensions of time may be obtained under the provisions of 37 CFR 1.136(a)).

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

☐ 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to the final rulemaking notice published at 55 FR 18230 (May 1, 1990), and 1114 OG 29 (May 15, 1990). If the effective filing date is on or after July 1, 1998, see the final rulemaking notice published at 63 FR 29620 (June 1, 1998) and 1211 OG 82 (June 23, 1998).

☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).

☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).

☐ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."

☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).

☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable from of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).

☒ 7. Other: See Office Action.

Applicant Must Provide:

☐ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".

☐ An initial or substitute paper copy of the "Sequence Listing", **as well as an amendment specifically directing its entry into the application**.

☐ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (703) 308-4216 or (703) 308-2923
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